37. (Amended) An alloy comprising a randomized microstructure and a t xture with a substantially uniform grain size; said alloy being produced from a cast material by a method comprising the steps of:

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected at least one route, the alloy comprising a substantial absence of precipitates.

38. (Amended) An alloy comprising a strong texture; said alloy being produced from a cast material by a method comprising the steps of:

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected at least one route, the alloy comprising uniformly distributed second-phase precipitates.

39. (Amended) An alloy comprising substantially random textures; said alloy being produced by a method comprising the steps of:

defining equal channel angular extrusion routes for defining predetermined shear planes and crystallographic directions in the alloy;

selecting at least one route from the defined routes for plastically deforming the alloy during equal channel angular extrusion; and

subjecting the alloy to a predetermined number of passes through the selected at least one route; the alloy comprising a fine grain size of less than about 1 micron.

B1

40. (New) The alloy of claim 39 wherein the alloy comprises at least one of Al, Cu, Ta, Ni, Mo, Ag, Au, and Pt.

B2

41. (New) The alloy of claim 39 wherein the predetermined number of passes comprises at least 3 passes.

42. (New) The alloy of claim 39 wherein the alloy has an orientation distribution function (ODF) of less than 7000 mrd.

43. (New) The alloy of claim 39 comprising uniformly distributed fine precipitates having an average diameter of less than 0.5 microns

44. (New) The alloy of claim 37 wherein the alloy comprises at least one of Al, Cu, Ta, Ni, Mo, Ag, Au, and Pt.

45. (New) The alloy of claim 37 wherein the alloy has an orientation distribution function (ODF) of less than 7000 mrd.

46. (New) The alloy of claim 37 wherein the substantially uniform grain size is less than about 1 micron.

47. (New) The alloy of claim 37 wherein grains of substantially uniform size comprised by the alloy are equiaxed grains.

48. (New) The alloy of claim 38 wherein the uniformly distributed second-phase precipitates have a precipitate size of less than about 1 micron.

49. (New) The alloy of claim 38 wherein the uniformly distributed second-phase precipitates have an average precipitate diameter of less than 0.5 microns.

50. (New) The alloy of claim 38 wherein the uniformly distributed second-phase precipitates have an average precipitate diameter of less than 0.1 microns.

51. (New) The alloy of claim 38 wherein the predetermined number of passes comprises from 1 to 4 passes.

52. (New) The alloy of claim 38 wherein the alloy comprises at least one of Al, Cu, Ta, Ni, Mo, Ag, Au, and Pt.

53. (New) The alloy of claim 38 wherein the alloy has an orientation distribution function (ODF) of between 10,000 mrd and 20,000 mrd.

54. (New) The alloy of claim 38 wherein the alloy has an orientation distribution function (ODF) of greater than or equal to 20,000 mrd.

B2